

WHAT IS CLAIMED IS:

1. An LED light system, comprising:
 - (a) a wafer, said wafer comprising a micro-reflector cavity at the surface of said wafer; and
 - (c) an LED die mounted within said reflector cavity.
2. The LED light system of claim 1, wherein said wafer is formed of a semiconductor material.
3. The LED light system of claim 2, wherein said reflector cavity is coated with a conducting material, said LED die comprises an anode and a cathode, and said conducting material contacts one of said anode and said cathode.
4. The LED light module of claim 3, wherein said reflector cavity is shaped as an inverted, truncated pyramid.
5. The LED light module of claim 3, wherein said reflector cavity comprises opposing sides, and an angle formed between said opposing sides is about 71°.
6. The LED light module of claim 3, wherein said LED die comprises a red LED, a green LED, and a blue LED.
7. The LED light module of claim 6, wherein said wafer comprises a plurality of micro-reflector cavities, said micro-reflector cavities formed in a cluster on said wafer.
8. The LED light module of claim 3, further comprising an encapsulant that encases said LED die.

9. The LED light module of claim 8, wherein said encapsulant is a high refractive index optical gel.
10. A method of constructing a light system comprising a semiconductor wafer and an LED die, comprising the steps of:
 - (a) etching the semiconductor wafer to form a micro-reflector cavity;
and
 - (b) mounting an LED die within the micro-reflector cavity.
11. The method of claim 10, further comprising the steps of coating the micro-reflector cavity with a conducting material, and connecting one of a cathode and anode attached to the LED die to the conducting material.
12. The method of claim 11, wherein said step of etching the semiconductor wafer is performed with an etching agent that acts in an anisotropic manner with respect to the semiconductor material.
13. The method of claim 12, wherein the semiconductor material is silicon, and the etchant material is a hydroxide.
14. The method of claim 13, wherein said etchant material is potassium hydroxide.
15. The method of claim 11, wherein the micro-reflector cavity formed in said etching step is shaped as an inverted, truncated pyramid.
16. The method of claim 11, wherein the reflector cavity formed in said etching step has opposing sides, and the angle formed between the opposing sides is about 71°.

17. The method of claim 11, wherein the LED die comprises a red LED, a green LED, and a blue LED.
18. The method of claim 17, wherein said etching step comprises the formation of a plurality of micro-reflector cavities such that the plurality of micro-reflector cavities form a cluster on said wafer.
19. The method of claim 12, further comprising the step of encasing the LED die with an encapsulant.
20. The method of claim 19, wherein said encapsulant is a high refractive index optical gel.